



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/821,711

04/08/2004

Larry A. Gilbertson

MONS:140US

1699

73905

7590

10/14/2008

SONNENSCHN NATH & ROSENTHAL LLP

P.O. BOX 061080

SOUTH WACKER DRIVE STATION, SEARS TOWER

CHICAGO, IL 60606

EXAMINER

KRUSE, DAVID H

ART UNIT

PAPER NUMBER

1638

MAIL DATE

DELIVERY MODE

10/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/821,711

**Applicant(s)**

GILBERTSON ET AL.

**Examiner**

David H. Kruse

**Art Unit**

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 10, 11, 13, 15, 19-23, 25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 19-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10, 11, 15, 25 and 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/26/2008
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR § 1.114, including the fee set forth in 37 CFR § 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR § 1.114, and the fee set forth in 37 CFR § 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR § 1.114. Applicant's submission filed on 18 July 2008 has been entered.

***Election/Restrictions***

2. Claims 13 and 19-23 remain withdrawn from further consideration pursuant to 37 CFR § 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 24 October 2006.

***Claim Rejections - 35 USC § 103***

3. Claims 1-4, 10, 11, 15 and 25-26 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Heim *et al* (U.S. Patent Application Publication US 2003/0188345 A1, filed 28 June 2001) in view of Lange *et al* (U.S. Patent 5,939,539) and Ebinuma *et al* 1997 (Proc. Natl. Acad. Sci. USA 94: 2117-2121). This rejection is repeated for the reasons of record set forth in the previous Office action mailed 18 March 2008. Applicants' arguments filed 18 July 2008 have been fully considered but are not found to be persuasive.

Applicants argue that the amendment of claims 1 and 15 renders moot the obviousness rejection in view of Heim, Lange, and Ebinuma, for instance in that terms such as "metabolic interference" and "cytokinin pathway substrate-diverting gene" are no longer recited. Applicants argue that Heim *et al.* do not teach use of a gibberellic acid pathway substrate-diverting gene as is now claimed, and neither Lange nor Ebinuma cure this defect, or describe or teach use of a "gibberellic acid pathway substrate-diverting gene" as is presently claimed (page 7, 1<sup>st</sup> paragraph of the Response).

Applicants argue that the assertion that Heim motivates the use of "any" non-lethal selectable marker, let alone "other" non-lethal selectable markers, is unsupported and represents hindsight reasoning. Applicants respectfully ask that the Examiner point to any teaching of Heim that relates to use of "any" negative selectable marker gene. Applicants argue that Heim is largely concerned with preparing a plant transformation vector that is small in size. Applicants argue that the entirety of the teachings of Heim specifically regarding a negative selectable marker are found in one sentence at paragraph [0023], and that no possible negatively selectable markers other than *codA* of Gallego are contemplated (page 7, 2<sup>nd</sup> paragraph of the Response).

Applicants argue that Lange does not describe use of gibberellin 20-oxidase (GA 20 oxidase) as a selectable marker, including use as a non-lethal selectable marker. Applicants argue that use of the GA20 oxidase by Lange is in the context of its effect on plant growth characteristics due to up-regulation or down-regulation of GA synthesis (*e.g.* Lange, U.S. Patent 5,939,539; column 17, line 45, to column 18, line 34), including instances where GA 20-oxidation is a rate limiting step (Lange, column 18, lines 10-11).

Applicants argue that in view of Lange, given sequences involved in GA synthesis are thus required to be present for an effect such as altered vegetative growth to be seen. Applicants argue that this teaches away from use of, for instance, GA 20-oxidase sequences, as a negative selectable marker, since loss of a GA 20-oxidase gene would be understood by the skilled practitioner, in view of Lange, to lead to loss of a desired phenotype, and would thus be avoided by a practitioner in view of the teachings of Lange, *i.e.* by selecting for the presence of a GA 20-oxidase gene sequence (or complement) as desired. Applicants argue that Lange in no way teaches suggests or contemplates that a GA20-oxidase or any other gene involved in GA synthesis is to be used as a negative selectable marker, for instance to be placed outside of the border sequences on a vector designed for *Agrobacterium-mediated* transformation and then selecting for loss of the presence of the gene and associated vector sequence (paragraph spanning pages 7-8 of the Response).

Applicants argue that the *codA* gene described by Heim and Gallego is not described as a plant hormone synthesis or substrate diversion-related gene, but is instead a metabolite interference gene, as is explicitly conceded by the Action at page 4, last two lines. Applicants argue that claims 1 and 15 have been amended, and no longer recite "metabolic interference gene". Applicants argue that Ebinuma is cited for its use of a cytokinin synthesis-related effect. Applicants argue that whether or not an *ipt* gene involved in cytokinin synthesis may function as described by Ebinuma is irrelevant to the presently claimed invention, and does not cure the defect of Helm in view of Lange (page 8, 2<sup>nd</sup> paragraph of the Remarks).

Applicants argue that the described unexpected result, that is the effect of the presence of a gene such as *crtB* in inhibiting regeneration of transgenic plants that contain backbone sequences, and leading for instance to an unexpected increase in the percentage of single-copy transformants, is commensurate with the scope of the present claims. Applicants argue that the Action of September 2007 does not dispute the unexpectedness of these results at least as they relate to a gibberellic acid pathway substrate diverting gene (*crtB*; e.g. Action, page 7) (paragraph spanning pages 8-9 of the Response).

Applicants' arguments are not found to be persuasive. In response to applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The Examiner notes that both the *crtB* and *ipt* genes used by Applicants involve modifying hormone production in transformed plants, gibberellins and cytokinins, respectively, but claim 1 is directed to subject matter much broader than Applicants' asserted teaching of unexpected results. See *In re Lindner*, 173 USPQ 356 (CCPA 1972) and *In re Grasselli*, 218 USPQ 769 (Fed. Cir. 1983) which teach that the evidence of nonobviousness should be commensurate with the scope of the claims. In addition, Applicants argue that the intended use limitations render the claims non-obvious, but this is not found to be persuasive for the reasons of record given the teachings of Heim *et al* who teach the basic structure of claim 1. A recitation of the intended use of the claimed invention must

result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. See, e.g., *In re Kahn*, 441 F.3d 977, 987, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (motivation question arises in the context of the general problem confronting the inventor rather than the specific problem solved by the invention). It remains the Examiner's opinion that it would have been obvious to modify the DNA plasmid taught by Heim *et al* to introduce non-lethal negative selectable marker genes involved in gibberellic acid pathway substrate "diversion", especially given the fact that Lange *et al* had taught that the expression of a GA 20-oxidase transgene, for example, would produce a non-lethal effect that one of ordinary skill in the instant art would readily recognize could be used as a negative selectable marker.

#### ***Conclusion***

4. No claims are allowed.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David H. Kruse, Ph.D. whose telephone number is (571) 272-0799. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached at (571) 272-0975. The central FAX number for official correspondence is 571-273-8300.

Art Unit: 1638

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (571) 272-1600.

/David H Kruse/  
Primary Examiner, Art Unit 1638  
9 October 2008